TorchMate 3™ Software Option

FANUC Robotics

Basic Description

The TorchMate 3 software option provides a low cost, easy-to-use solution for automatic adjustment of the Tool Center Point (TCP). TorchMate 3 automatically compensates for bent torch barrels and worn contact tips to reduce weld repair and increase system uptime.

In a typical robotic arc welding cell, the location of the welding wire (TCP) to the joint must be maintained within +/- one-half of the wire diameter. If the welding torch is bent due to a crash or the contact tube becomes worn, poor quality welds can result. Without TorchMate 3, valuable production time is lost when these torches have to be replaced or weld paths have to be retaught.

Designed for the shop floor, TorchMate 3 does not require any special tools or controls. The setup of TorchMate 3 is completely menu driven and programming consists of a one-line statement.

TorchMate 3, the Solution for:

- Bent welding torches
- Contact tube wear
- Process control
- Maximum system uptime

Benefits

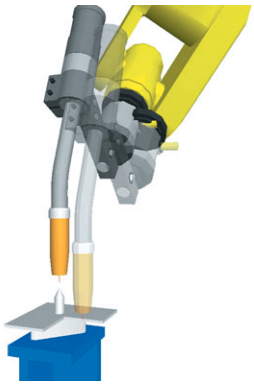
- Simple, reliable hardware and proven software provide an effective solution for tool center point maintenance.
- Fast execution time has little or no impact on cycle time or throughput.

- Maintaining an accurate TCP ensures quality welds.
- Data collection of offset values provides quality records and reports.
- When used as a preventive maintenance routine, TorchMate 3 increases overall uptime.

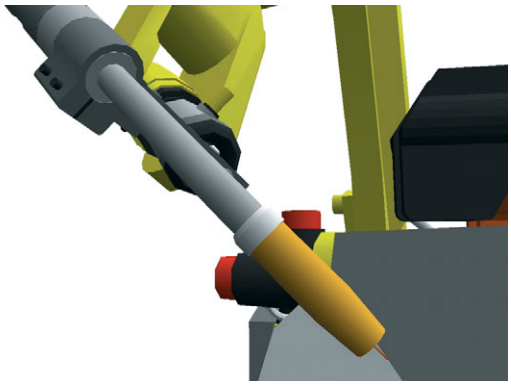
Features

- Calculates the offset of the TCP in X, Y and Z to maintain wire placement.
- The last 100 adjustments can be viewed, printed and transferred to a PC for statistical process control (SPC) data analysis.
- TorchMate 3 can be initiated by a user push button, robot input or automatically during production.
- Executes search pattern in less than five seconds.
- Before a point can be recorded or touched up, an automatic popup message reminds users to run the TorchMate 3 macro if it has not been executed within a defined number of hours.
- Utilizes a simple calibration block with no moving parts or electronic components to fail or require calibration.
- Compatible with any welding power supply.
- Compatible with any welding torch and end-of-arm safety devices.
- Offset limits can be defined by operators to avoid using excessively damaged torches.
- Selectable automatic error recovery method for exceeding offset limits or sensor faults.
- User-defined output indicates TorchMate 3 fault status.

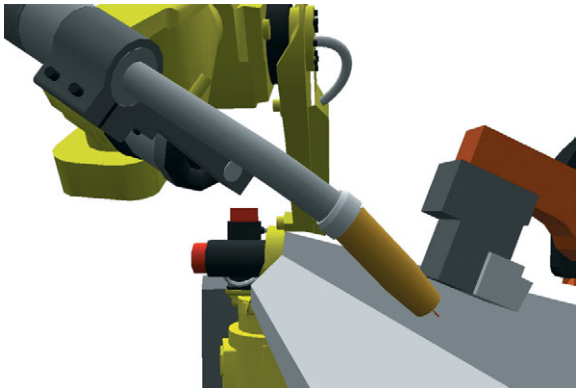
Process



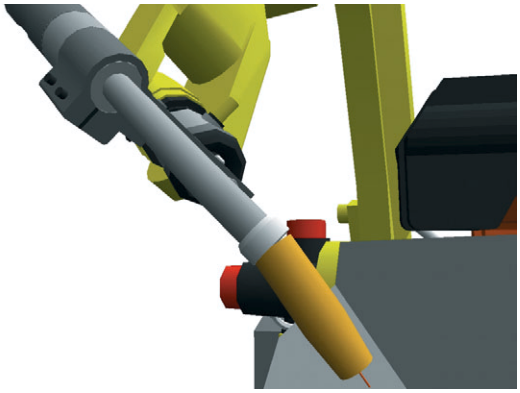
1) Setup is simple and requires only one taught point.



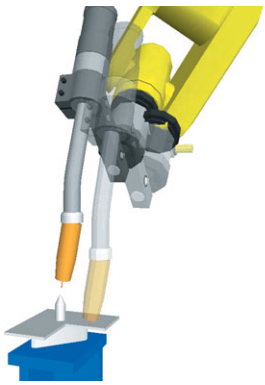
2) Normal production has good weld quality.



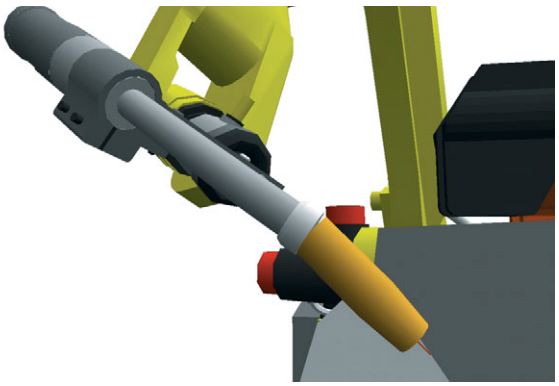
3) Torch is bent during production.



4) Poor weld quality results if production continues.



5) TorchMate 3 adjusts the TCP.



6) Normal production resumes with good weld quality.

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